

I claim:

1. An glass and plastic composite comprising:

a glass having a shape, a center, a margin;

a plastic having a shape essentially adapted to receive the shape of the glass, a center, a margin; and

a sealant disposed between the margin of the glass and the margin of the plastic, whereby the center of the glass and the center of the plastic are devoid of the sealant.

2. The composite of claim 1 wherein the glass contains a microwave absorbent compound selected from the group consisting of a metallic salt and a ferrite.

3. The composite of claim 2 wherein the glass is photochromic.

4. The composition of claim 1 wherein the plastic is selected from the group consisting of polycarbonate, polyurethane, polystyrene, fluorocarbon and polymethylmethacrylate.

5. The composition of claim 1 wherein the sealant is selected from the group consisting of silicones, shellac, lacquer, silane coupling agents, disilyl crosslinker compounds, epoxy resins, crosslinkable polyethylene vinylacetate terpolymer, polyvinyl butyral and polysulfide.

6. The composite of claim 1 wherein the glass and plastic are transparent and refractive.

7. The composite of claim 1 wherein the margin of the glass has at least one appendage and the margin of the plastic defines an aperture shaped for receiving the appendage of the glass.

8. The composite of claim 1 wherein the percentage of glass in the composite is between about 0.01 to 99.99%.

9. The composite of claim 1 wherein the percentage of plastic in the composite is between about 0.01 to 99.99%.

10. The composite of claim 1 wherein the margin of the plastic has at least one appendage and the margin of the glass defines an aperture shaped for receiving the appendage of the plastic.

11. A microwave-transparent spring-loaded vice adapted to hold together the glass and plastic of claim 1.

12. The vice of claim 11 wherein the spring tension is between about 0.01 to 200 foot pounds.

13. A microwave-transparent, weighed vice adapted to hold together the glass and plastic of claim 1.

14. The vice of claim 11 wherein the vice's holding weight is between about 0.01 to 100 foot pounds.

15. A method of forming a glass and plastic composite comprising:

forming a glass having a margin and a center to a particular shape;

forming a plastic having a margin and a center to a shape essentially adapted to receive the shape of the glass;

applying sealant only to the margin of the glass and the margin of the plastic, whereby the center of the glass and the center of the plastic are devoid of the sealant;

placing together the glass and the plastic;

placing the glass and plastic into a vacuum chamber;

applying vacuum pressure to the glass and the plastic;

placing the vacuum chamber into a microwave oven; and

applying microwave radiation to the glass and the plastic for an effective time.

16. The method of claim 15 wherein the applied vacuum pressure is between about 0.01 to 200 torr.

17. The method of claim 15 wherein the microwave radiation is applied at between about 10 watts to 100,000 watts and a frequency of about between 3kHz to 300 Ghz.

18. The method of claim 15 wherein the microwave radiation is applied for between about 0.01 to 100 minutes.

19. A method of forming a glass and plastic composite comprising:

forming a glass having a center and a margin to a particular shape;

forming a plastic having a margin and a center to a shape essentially adapted to receive the shape of the glass;

applying sealant only to the margin of the glass and the margin of the plastic, whereby the center of the glass and the center of the plastic are devoid of the sealant;

applying force to the glass and plastic by placing the glass and plastic into a microwave-transparent vice adapted to hold together the glass and plastic;

placing the glass the plastic into a vacuum chamber;

applying vacuum pressure to the glass and the plastic;

placing the vacuum chamber into a microwave oven; and

applying microwave radiation to the glass and the plastic for an effective time.

20. The method of claim 19 wherein the vacuum pressure applied is between about 0.01 to 200 torr.

21. The method of claim 19 wherein the microwave radiation is applied for between about 0.01 to 100 minutes.

22. The method of claim 19 wherein the microwave radiation is applied at between about 10 to 100,000 watts and at a frequency of about between 3kHz to 300 Ghz.

23. The method of claim 19 wherein an effective amount of distilled water is applied to the center of the glass and the center of the plastic before applying the microwave radiation.

24. The method of claim 19 wherein the force of the vice is gravity.

25. The method of claim 19 wherein the force of the vice is spring tension.

26. A method of forming a glass and plastic composite comprising:

forming a glass having a center and a margin to particular shape;

forming a plastic having a margin and a center to a shape essentially adapted to receive the shape of the glass;

applying force to the glass and plastic by placing the glass and plastic into a microwave-transparent vice adapted to hold together the shape of the glass and the shape of the plastic;

placing the glass and plastic into a vacuum chamber;

applying vacuum pressure to the glass and the plastic;

placing the vacuum chamber into a microwave oven;

applying microwave radiation to the glass and the plastic;

applying sealant only to the margin of the glass and the margin of the plastic, whereby the center of the glass and the center of the plastic are devoid of the sealant; and

applying microwave radiation to the glass and the plastic for an effective time.

27. The method of claim 26 wherein the force of the vice is gravity.

28. The method of claim 26 wherein the force of the vice is spring tension.

29. The method of claim 26 wherein an effective amount of distilled water is applied to the center of the glass and the center of the plastic before placing the glass and plastic into the microwave-transparent vice.

30. The method of claim 26 wherein the vacuum pressure is applied for between about 0.01 to 200 torr.

31. The method of claim 26 wherein the microwave radiation is applied for between about

0.01 to 100 minutes.

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B3 32. The method of claim 26 wherein the microwave radiation is applied for between about 10 to 100,000 watts and a frequency of between about 3kHz to 300 Ghz.

33. The method of claim 26 wherein the microwave radiation is applied for between about 0.01 minutes to 100 minutes.

34. A glass and plastic composite made according to the method of claim 15.

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B5, B7, B9

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